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ABSTRACT

The effects of attending desegregated schools on the occupational attainment of blacks were examined through a 1983 follow-up study of students who began desegregated schooling in early elementary school in 1966 as part of a randomized experiment (Project Concern, Hartford, Connecticut) and of students in a control group. The students were nearly all non-Hispanic American blacks, and a few were of Puerto Rican or West Indian ancestry. The main finding was that the desegregated black students obtained different types of employment than did the students in the control group. The desegregated students are now working in occupations which are less commonly held by blacks: for instance, men are salesmen rather than postmen, while women are secretaries rather than nurses' aides. In general, those who experienced desegregated schooling are more likely to be working in white collar and professional jobs in the private sector, while those from segregated schools are more likely to be working in government and in blue-collar jobs. (KH)

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School Desegregation and Black Occupational Attainments: Results from a Long-term Experiment

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School Desegregation and Black Occupational Attainment:

Results from a Long-Term Experiment

Robert L. Crain and Jack Strauss

Abstract

This study reports on a long-term study of the effects of racial desegregation of schools, based on the tracing of students initially involved in a randomized desegregation experiment. In our research we identified the students involved in the original 1966 experiment and in the randomly sampled control group, added the names of other students who were desegregated between 1968 and 1971, identified control groups for those students and traced all the students (and their parents) in 1983, when they had all had time to finish secondary school. We have followed every student in the experiment, including those who quit the desegregated schools and returned to the central city and those who were selected for desegregation but refused to participate. Doing this provides an unusually rigorous research design. Some 700 parents and/or students were located and interviewed.

The principal finding of this report is that the desegregated students obtained different types of employment than did the students in the control group. The desegregated students are working in occupations which are less commonly held by blacks--men are salesmen rather than postmen, women secretaries rather than nurses aides. In general, those who experienced desegregated schooling are more likely to be working in white-collar and professional jobs in the private sector,

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while those from segregated schools are more likely to be working in government and in blue-collar jobs.

For men this is mainly because desegregated students have a greater amount of education; but for females, the effect of desegregation is quite strong even when educational attainment is controlled. Desegregated students report that they aspired to these types of jobs when they were in high school, and this seems to be the main way desegregation affected their occupations.

Introduction

Most research done in the past two decades on the effects of desegregation has focused on short-term outcomes, particularly achievement test scores, and indicates that black test scores rise after desegregation (Crain and Mahard, 1978, 1983). But we do not know how important this result is. Performance on standardized tests should be viewed only as possibly an indicator of quality of education; high scores should be valued only if they genuinely reflect a superior education and can be shown to lead to a happier or more successful adult life. Research focused on student attitudes measured by psychological scales is also difficult to interpret because we do not know what the relationship is between a concept such as self-esteem or locus of control and actual behavior in later life.

However, a recent series of research studies focus on important adult behaviors of graduates of desegregated schools (Braddock, Crain and McPartland, 1984). The most important of these are studies of the perpetuation of segregation--the way in which segregated schooling leads to segregated work, segregated post-secondary schooling, and segregated housing. For example, graduates of segregated elementary and secondary schools tend to attend segregated colleges (Braddock, 1980; Braddock and McPartland, 1982). When they attend desegregated colleges they get lower grades (Braddock and Dawkins, 1983) and are more likely to drop out (Crain and Weisman, 1972; Crain and Mahard, 1978).

Research has also shown that black graduates of desegregated schools tend to have desegregated associations in later life (Braddock

and McPartland, 1983; Crain and Weisman, 1972). School desegregation seems to lead to better employment (Green, 1981). It appears that desegregation in adulthood enables blacks to use biracial social networks to obtain better employment (Crain, 1970; Dawkins and Braddock, 1985; McPartland and Braddock, 1981). Some research on desegregated black students indicates that they set their aspirations higher (Dawkins, 1983). Several studies show that their aspirations are more coherently related to their skills and educational background (Boelter, 1982; Wilson, 1979; Falk, 1978; Gable, Thompson, and Iwanicki, 1982). Research has also shown that black graduates of desegregated schools are more likely to find themselves in desegregated employment--working with white co-workers and not uncomfortable when they are placed under a white supervisor (Braddock, 1983; Braddock and McPartland, 1983; Braddock, Mcpartland and Trent, 1984).

The methodology of evaluation has changed radically in the past two decades. Two decades ago, simple longitudinal, pre-test/post-test designs were state of the art; today there are many references pointing out potential bias in this type of design (an often cited one is Cook and Campbell, 1979), and frequent calls for randomized experiments. The research reported here is part of this new wave of studies on long-term effects. It looks not at test scores, but at occupational attainment, using an experimental design.

A parallel report analyzing these same data (Crain, Hawes, Mille and Peichert, 1985) finds that desegregated schooling increases the likelihood of high school graduation and increases the number of years of college obtained by desegregated male blacks. Desegregation leads

to more positive attitudes about race relations on the part of males, a higher rate of social integration and preference for desegregated housing on the part of both males and females, a lower rate of early childbirth among females and less difficulty with police among males. These findings are consistent with other literature; Crain and Weisman (1972) obtained similar results from a non-experimental study.

Research Method

Our research is designed to take advantage of an early experimental evaluation of desegregation. In 1966, a group of students were desegregated in early elementary school using a randomized experimental design--two groups were selected randomly, one to attend desegregated schools, the other to remain in segregated schools. The students were nearly all non-hispanic American blacks; a few were of Puerto Rican or West Indian ancestry. (A small number of whites were dropped from our research.) Because nearly all the subjects were black, we will usually refer to the subjects as blacks rather than minority. The main goal of this research was to simply follow up that original 1966 study locating the students after they had time to graduate from high school to see what differences in their lives as young adults could be attributed to desegregation.

The desegregation plan--Project Concern in Hartford, CT,--began in 1966 by selecting a random sample of students from four inner-city elementary schools and permitting them to transfer to suburban schools while a second random sample was preserved as a control group. We supplemented the sample by also including all students who were desegregated in that program in 1968 through 1971. Most of these stu-

dents were randomly sampled, but a control group was not drawn at that time; we attempted to construct a control group based on the same random sampling scheme as was used to select Project Concern participants in 1968 and 1969. We also found that some students entered the program as volunteers, which implies a self-selection bias; we located a group of students who attempted to volunteer for the program in 1968 and used them as a control group for comparison to the volunteers. Thus, we have three substudies; a 1966 experimental design, a 1968-69 experimental design, and a study of voluntary desegregation.

We searched school records and undertook a very large tracing effort to locate these various groups of students in 1982. There are a number of problems: the 1966 experiment's records are partly missing, the control group we randomly selected for comparison to the students randomly sampled in 1968 has lower family income than it should, considerable attrition occurred and a number of students could not be located. Despite these problems we are convinced that this is the strongest research design available in the United States today for a study of the long-term effects of desegregation.

The 1966 Experiment Substudy

Project Concern began in 1966, when, at the request of the State Department of Education, five suburban school districts agreed to accept 266 minority students from low income schools in Hartford. The students were selected from the four elementary schools which had the largest number of Title I eligible students. The sending area superficially resembles other big city low income areas; it is segregated and has much rental housing and subsidized housing.

The project was viewed as a demonstration, with the decision to continue based on an evaluation done at the end of two years. Two random samples of students were selected, one to attend suburban schools and a second as a control group. The Hartford public school district chose to select 12 entire classrooms to be sent to the suburbs because this would have the least impact on the sending school, and loaned the 12 teachers (who would otherwise be displaced) to the suburban schools to provide additional support for the transferring students. A meeting of community leaders was held and a lottery was used to select 12 "treatment" and 12 "control" classrooms from the four minority schools which had been designated as sufficiently poor to merit Title I assistance. The classrooms ranged from entering kindergarten students through students beginning the 5th grade in the Fall of 1966.

In an experiment it is very important that as many of the students as possible who are selected for a particular treatment receive that treatment to minimize bias in the study results. To encourage as many students as possible to attend suburban schools, a group of teacher's aides visited homes to persuade parents to enroll their children. Only 12 students were not signed up for the program. (This process is described in Mahan, 1968).

Students were pretested upon entering the program in Fall, 1966, with both intelligence and achievement tests and retested in the Spring and Fall of 1967 and finally in the Spring of 1968. Mahan found no important differences in the spring 1967 testing of the two groups of students, but found the Project Concern students to be not-

iceably ahead of the control group by Spring 1968. The difference was limited to those students who began desegregation in the lower grades. Students who entered the suburban schools in kindergarten or first grade showed considerably higher test score gains than their control group. In contrast the students who began desegregation in the fourth and fifth grade showed relatively little gain and in some cases losses in achievement.

The 1968-1969 Experiment Substudy

In addition to the 266 students in the 1966-1968 experiment, we added every student who entered Project Concern in 1968, every student who entered in 1st grade or higher in 1969, and every student who entered in 2nd grade or higher in 1970 or 3rd grade or higher in 1971. (We also dropped everyone born after 1963, to eliminate students who would be too young for a reasonable evaluation of post-high school outcomes in 1982.)

Although the evaluation was finished in 1968, the policy of random sampling students from the low income schools to attend Project Concern was continued. In 1968 and 1969, Project Concern staff visited the schools and randomly selected first, second, and third graders. Letters were mailed to the parents of selected students and an effort was made to visit the parents in their home, but in many cases families were not home, did not answer the door, or school district addresses were out of date. The acceptance rate in 1969-69 was 50%, much lower than in 1966, probably because less time and money had been invested in contacting parents. Fortunately, Project Concern preserved all the records of the recruitment effort in 1968-69, including

the names of all the students who could not be contacted or whose parents refused to enter them into the program after being asked. We used all students who had been selected, whether they agreed to go into the program or not, in order to preserve the randomness of the original selection. If desegregation had any effect it would raise the average of the entire group of selected students, including the refusers.

We constructed a control group, using the files of the sending elementary schools to draw random samples of the students present in 1968 and 1969 who were not selected for Project Concern. However, compared to the students selected in 1968-69 for Project Concern, our random sample contained more students of lower socioeconomic status.

The Volunteer Substudy

In 1970 and 1971 the district sent letters to parents telling them that their child had been selected and encouraging them to participate, but did not send staff to visit homes. About a quarter of the parents agreed to participate. Preserving the randomness of the original sample would have required including three students who had never participated in Project Concern with each student who did, obviously making an effect of Project Concern difficult to detect. We decided not to do this, but to instead treat the randomly sampled 1970-71 students who entered the program as volunteers.

We also found a number of other students for whom there was no record of their being randomly chosen. Although there was no systematic effort to allow families to volunteer for the program there were

times when some Hartford public schools had severe overcrowding problems and encouraged students to participate in Project Concern. We combined these volunteer students with those students who were selected in 1970 and 1971; they are similar from the viewpoint of the research method in that neither could be considered randomly sampled. We had a ready-made control group, since the Project Concern office had preserved a folder of telephone messages from parents who had called the program in 1968 and 1969 attempting to enroll their children in the project. We did not include those attempted volunteers whose families were able to put them into desegregated schools by enrolling them in Catholic schools or by moving to the suburbs.

A more complete description of the field work appears in Crain, Hawes, Miller and Piechert, 1985).

Results

The young adults who participated in the Project Concern desegregation program hold different types of occupations as a result. We will present the data in two ways; first, in the form of simple comparisons of desegregated and segregated students; then in more complex analyses which take advantage of the experimental design to produce results which test the findings rigorously.

There is little evidence in this survey that unemployment is markedly lower for the participants in the desegregation program. At the time of our survey males who were desegregated were considerably more likely to be in college full time. However, those who participated in the program and were not in college did not have low unem-

ployment rates. In this paper we limit our analysis to those students who were not in college and who had held a permanent job at some time. This is about 60% of the total sample.

Occupational data was obtained either from the young adults surveyed or in some cases where that respondent could not be located, from his or her parents. We ask about the present or last full-time or part-time occupation, excluding summer jobs of persons in college. For each occupation, we coded the racial mix of that occupation in the national labor force.

The sample was stratified and respondents who graduated from the central city schools were undersampled since they outnumbered those who finished in suburban schools. A stratified sample is less "efficient" than a simple random sample. For example, either respondent or parent surveys were obtained on 117 females who were in the control group. However, because of differential weighting of the students in this group, the sample has the value of a simple random sample of only 87 students. This is called the "effective n" and is given in the tables of this report. Nearly all Project Concern participants were sampled, so that this group generally has a weight of one and its effective sample size is almost the same as the actual sample. For the control groups, the effective sample is always smaller than the actual sample, by a factor of one-third for females and one-sixth for males.

The simplest comparison is between (1) those young adults who participated in Project Concern and attended only desegregated schools (either Project Concern schools, private schools, other public subur-

ban high schools, or the regional vocational school) excluding all those who dropped out of the program and returned to central city schools to finish their education; and (2) those who were selected for the control group, excluding those who "dropped out" of the city schools by attending the regional vocational high school, private schools, or whose families moved to the suburbs. Table 1 shows that when these two groups are compared, Project Concern participants tended to be in occupations which nationally have a smaller black percentage. The 5% difference for females is particularly large, but the difference for males is also statistically significant.

It is unlikely that respondents chose their occupation consciously aware of its national racial composition. However, Project Concern participants did choose different types of employment and this appears to explain why their occupations are less typically held by blacks. We divided occupations into twelve categories. First, government and public service were assigned to one category. In general, we classified an occupation as government-public service if the employee worked for a health, education or welfare organization, without distinguishing, for example, between public and privately owned hospitals. The private sector jobs were divided into 6 categories: white collar; sales; entertainment; blue collar; service; and labor.

Four of these seven categories were further subdivided. White collar was divided into three tiers: professional-managerial, and higher and lower non-professional. Public service, blue-collar and service occupations were also divided into higher and lower tiers. For service the higher status positions were those with scores of four or

more on the Directory of Occupational Titles Specific Vocational Preparation (SVP) scale (Cain and Trieman, 1981). For public service, and for white- and blue-collar jobs, the higher occupations were those with SVP scores of 5 or more.

Table 2 shows the distribution of Project Concern participants and control group members in the twelve occupational categories. The twelve occupational categories are ranked by the national percentage black of the category, ranging from sales, the whitest occupation, to lower public service, the one with the largest black percentage nationally. The four whitest occupational categories-- sales, private sector professional-managerial, entertainment and higher private sector white-collar positions--are held by only 8% of the male control group but 23% of the male Project Concern participants; the difference for females is also large. In general, the table shows that Project Concern participants, both male and female, are more likely to hold positions in sales, higher white-collar occupations and in service. The control group is over-represented in labor and blue-collar public service positions, especially in the lower strata.

The tendency for Project Concern participants to be located in sales and white-collar positions rather than blue collar positions is shown in Table 3, in which the occupations are divided according to their primary identification in the six-category Holland system. Project Concern participants are over-represented in the enterprising category, reflecting the over-representation we saw in sales in Table 2; females are heavily over-represented in the conventional category, which covers much of office positions, and both male and female Pro-

ject Concern participants are under-represented in the social category (which contains much government service and health, education and welfare positions) and realistic category, which includes factory positions.

The last piece of data describing the types of occupations held comes from the respondents themselves. In the survey they were asked how good they thought their chances for promotion were and also about the race of their co-workers. Table 4 shows that Project Concern participant females (but not males) were more likely to say they worked in a mostly white group, and both male and female participants described their chances for promotion as being good.

If Project Concern participants are right in describing their chances of promotion as being good, they may have forgone immediate rewards of salary and prestige in favor of higher future benefits. Project Concern participants do not have higher incomes than control group members, are not in occupations which have higher socioeconomic indices, nor are they in occupations which nationally have higher average incomes for either males or females. They may, however, be in occupations where the chance for promotion into higher-paying occupations is better, but we have no data for occupations on promotion chances, so we cannot independently verify that Project Concern participants have chosen occupations which will provide promising careers.

Analysis of the experimental design

Any analysis is valid only if we assume that we are comparing subjects who differ on the independent variable (in this case degree of

desegregation), but do not differ significantly on other variables which might produce spurious effects. In the typical research study one has little in the way of guarantee that this is the case. This is most obvious in a typical voluntary desegregation study. There is the possibility that students who volunteered for desegregated schooling come from higher income families. They may also be more highly motivated, or come from families which have generally provided more help to their children's schooling. They may be students who are more talented in school work or they may be the less talented students---those who have done badly in a segregated school, so that their parents searched for desegregation as a device to rescue their children's education. Finally, the students who are voluntarily desegregated may be those for whom the logistics are more manageable --those from two parent households, or those who live relatively close to the receiving schools. Even when we are studying students who were assigned to desegregated schools, we can't be sure that disinterested students did not drop out, and highly motivated families "sneak" into the program.

Thus instead of the ideal situation where the desegregated students differ from the segregated students only in the fact of their desegregation, in the usual research design segregated and desegregated students may differ on a variety of dimensions and some of these differences may be unknown to the researcher.

Typically the best technique available to deal with this problem is statistical matching--using analysis of covariance or multiple regression to adjust the scores of each group up or down to compensate for

differences in pretest scores or background factors. But the techniques for adjustment are themselves biased, typically underadjusting the data so that control variable differences persist in a concealed fashion in the final result (see Cook and Campbell, 1979, 295-300). If students in desegregated schools are superior in family background, a regression or covariance analysis would still show desegregated students learning more after adjustment for pretest differences even if this were not really the case.

All the data presented in Tables 1 through 4 can be assumed to be biased by self-selection. In comparing those students who entered Project Concern and remained in the program until they finished schooling to a control group of students who remain in the Hartford public schools, we are comparing two groups which may be self-selected in terms of family income or motivation. But the Project Concern experimental design gives us an opportunity to use a much stronger analysis method. We can compare two groups of students who are more strictly comparable--every student who was initially offered the opportunity to enter Project Concern and a randomly sampled control group of students who were never offered the opportunity. By comparing everyone who was ever offered the opportunity in Project Concern with everyone in the control group who never received such an offer, we will largely eliminate any bias due to self-selection.

Thus our "treatment" group includes those students who never participated in Project Concern, while the control group includes some students who were not given the opportunity to attend Project Concern schools but attended Catholic schools or schools in the suburbs

because their families moved there.

Although this procedure understates the effects of desegregation, the comparison is extremely useful. If desegregation had no effect at all, we should find that the high number of Project Concern participants selecting certain occupations is completely offset by a very low level of selection of these occupations by those respondents who refused to enter Project Concern or who dropped out of the program. The net effect would be that all students who were offered the opportunity to participate in the program should have no greater predisposition to be in (for example) enterprising occupations than would all the members of the control group (when those who were able to attend private or suburban schools are included). If desegregation has a beneficial effect, this comparison should show a modest difference remaining after adding all the students who initially refused to enter the program and all the students who "dropped out" of the control group by moving to the suburbs or entering private schools. If there is no such difference this suggests that the effects shown in the preceding tables are spurious.

We refer to this type of analysis as "Experimental Assignment Analysis"; Cook and Campbell (1979, p. 363) refer to it as "attrition from treatment but not from measurement."

In our experimental assignment, the respondents can be grouped into seven categories. The original 1966 experiment contained a (1) randomly selected treatment group who attended Project Concern schools and (2) a randomly selected control group. In 1968 and 1969, students were again selected for attendance at Project Concern schools using

random assignment. The selected students fall into two groups. One group (3) entered Project Concern; another group (4), a nearly equal number of students, never entered the program, either because the school district was unable to contact them or because their parents refused to allow them to enroll. We searched old school records and drew (5) a random sample of students from the same grades to use as a control group. Finally, (6) a group of students whom we are treating as volunteers for the program are compared to (7) a group of students whose parents attempted unsuccessfully to enroll them in the program.

Using these seven categories we arrived at one surprising result; Project Concern did not reduce unemployment. Among respondents who are not now enrolled in college, Project Concern participants (excluding dropouts and those who never entered the program among those initially offered the opportunity) have a low unemployment rate compared to those who were in the control group and remained in the Hartford public schools. However, what appears to be a positive effect of desegregation is merely selection bias. When program dropouts are added to the Project Concern group and control group "dropouts" whose families moved to the suburbs or who enrolled in private schools are included in the control group, the unemployment rates of the two groups do not differ.

Table 5 tests the hypothesis that Project Concern affected occupational distributions, using the experimental assignment method. Table 2 indicated that Project Concern participants were more likely to enter white-collar, professional, sales and service occupations in the private sector, while control group members were more likely to enter

public service positions and blue-collar and laboring positions. Table 2 showed 61% of the Project Concern participants entering private sector, professional, white-collar and service positions (categories 1, 2, 4, 7, 8, and 10 in that table) compared to 42% of the control group, a 19% difference. For females the percentages were 86% and 61%, a 25% difference. Table 5 shows the same percentages when subjects are grouped according to their initial experimental assignment. The first and third lines of the table show the percentages taken from a cross-tabulation; the second and fourth lines show percentages derived from a regression equation which controls on family background, age, and second grade achievement test scores. The family background variables are the education of the responding parents (usually the mothers); whether the families owned their home; number of siblings; a scale based on the presence of an encyclopedia, a daily newspaper, and a typewriter at home; and the respondents' report of whether they lived with two parents when they were 14.

Although 62% of male Project Concern participants are in private sector white-collar and service occupations, the first line of Table 5 shows a smaller percentage in these occupations of all those students initially assigned to the program. This is to be expected, since those students who refused assignment or dropped out of the program have received a much weaker desegregation treatment and therefore should look more like the control group. When they are added to the Project Concern participants the differences between the control group and the Project Concern group should decline. This is the case. Only 45% of the students assigned to Project Concern in the 1966 experiment are in private sector white-collar and service occupations, for exam-

ple.

The important question here is whether any differences remain between those students initially assigned to Project Concern and those initially assigned to the control group. If no differences remain, we must assume that all the results in Table 2 are due to self-selection. If the group assigned to Project Concern continues to differ from the control group, then self-selection bias is probably not a sufficient counter-explanation for the results found in Table 2.

For men, Project Concern differences remain for both the 1966 experiment and the volunteer group, but not for the students assigned to the program in 1968-1969. The differences are 13% for the 1966 experiment and 16% for the volunteer group. The second line of the table shows differences between those assigned to Project Concern and those assigned to the control group once social class factors, age and second grade achievment scores are controlled. Introducing the controls reduces the Project Concern-control group differences further, to only seven percent in the 1966 experiment and eight percent in the volunteer group and to minus three percent for the 1968-1969 group. Much of the apparent effect of desegregation on type of occupation held shown in Table 2 for males is really the result of self-selection bias.

For females, very strong effects of desegregation on type of occupation remain after self-selection bias is removed. The third line of Table 5 shows a 30% difference favoring the experimental group in the 1966 experiment and a 22% difference favoring volunteers who entered the program in comparison to those who attempted to enter and were

unable to. For the 1968-1969 program, those students who refused entry to the program are no more likely to hold private sector white-collar and service positions than are those in the control group, but those who accepted their initial assignment are 15% more likely to be in private sector white-collar and service occupations. When multiple regression is used to control on family background, age and second grade achievement test scores, these differences decrease only slightly--to 28% for the 1966 group, 23% for the volunteers, and 13% for the 1968-1969 group. This is very convincing evidence that the apparent effects of desegregation on occupational type for females in Table 2 are not the result of self-selection or differences in the background of students, but must be attributed to attending desegregated schools.

Further evidence of a sex interaction appears in Table 6. In that Table, we compare Project Concern participants and control group members (excluding dropouts) in six regression equations which analyze the impact of Project Concern participation, education, age and a family background scale separately on three occupational variables: national percentage black of the occupation held by the respondent; the number of respondents who are in the four least-black groups of occupations, private sector higher white collar and professional, sales and entertainment; and the percentage of respondents who are in private sector professional, sales, white-collar and service occupations, the variable used in Table 5. The family background scales were constructed by regressing each occupation variable on the family background variables (parents' education, home ownership, number of siblings, items in the home, presence of two parents) for the control groups only, and using the regression coefficients to compute a single

scale of family background. Separate regression equations were used to construct family background scales which are specific for each of the sex regression equations shown in the table. For males, the apparent effect of participating in Project Concern is much weaker than either family background factors or education. For females the opposite is true: Project Concern participation is the strongest predictor in two of the three equations and stronger than family background in the third.

For females, we see from Tables 5 and 6 that Project Concern participation tends to move female workers into occupations which are traditionally not held by blacks, into the higher status private sector white-collar occupations and into both high- and low-status private sector white-collar and service occupations. This result cannot be attributed to self-selection and it cannot be attributed to the fact that women participating in Project Concern have slightly more educational attainment than those in the control group. For males the story is more complex. Desegregation enhances the educational attainment of males in this study; those effects are quite strong (Crain, Hawes, Miller and Peichert, 1985). The higher educational attainment in turn pushes males toward whiter occupations and toward private sector white-collar positions. Since the effects of Project Concern on occupational type are weak once self-selection is controlled in Table 5, the evidence suggests that desegregation does not have much effect on the type of occupation held by males except indirectly through educational attainment.

Interpreting the male data is complicated by the youthfulness of

the population. The Project Concern participants were more likely than control group males to be in college at the time of the survey, and college students are missing from this analysis, so strong desegregation effects on occupational type could appear in the future. It may also be the case that the employment market for black males is such that there are more restrictions on opportunity which prevent desegregated black males from moving into positions in the way that desegregated black females have. This problem will require analysis of older graduates of desegregated schools, either with a different data set, or perhaps from a follow-up survey of this population.

Job Search Techniques

Table 7 reports three factors which one might expect to explain the occupational differences between Project Concern and control group participants. The first line reports the percentage of respondents who say that they left another position to take this one rather than being unemployed between jobs. Both male and female Project Concern participants were more likely to quit another job rather than waiting until they were unemployed to find a better position. This implies a more aggressive career management strategy. The second line reports the percentage of respondents who said that they had specific training or experience which qualified them for their present position. For females, Project Concern participants report a higher level of training and experience than does the control group, but there are no differences for males. Finally, the third line indicates that of all respondents who reported using some personal contact to learn about the opening or to be sponsored for the position, Project Concern par-

ticipants, especially females, used whites as contacts more than did members of the control group. However, the percentages seem low, given that the Hartford metropolitan area labor force is heavily white. Apparently even the Project Concern participants operate in a social network which is predominantly black.

Analysis of the data showed that persons with more training and experience and persons who changed jobs without a period of unemployment have better positions and that persons who use white contacts wind up in occupations with more white employees in them, but none of the differences in Table 7 are large enough to explain more than a fraction of the large difference in occupations between female Project Concern participants and their control group.

Occupational Choice

Respondents were asked to indicate the occupations they would like to have five years from now and the occupations they aspired to when they were high school age. Table 8 shows the pattern of aspirations that respondents report having had when they were in high school, and the occupations they would like to have five years from now. This table includes respondents who are now full-time college students. The 12 categories of Table 2 are collapsed to 7 here, by combining low and high positions in all categories and excluding laboring, which none aspired to.

The table suggests that some of the differences in present occupations are due to differences in the preferences that students held before they completed school. Both men and women who participated in

Project Concern report that they had less desire to enter public service occupations and more interest in sales. Males recall a higher desire to enter professional positions, lack of interest in blue-collar positions and a slight preference for service positions, all consistent with the sorts of occupations that Project Concern males moved into.

Present aspirations of males and females show the same pattern. Project Concern participants of both sexes show a preference for sales. Males show a preference for professional work and a lack of interest in blue-collar work; women Project Concern participants show a disinterest in public service work. Of course, we should expect social inertia to prompt many people to aspire to positions similar to positions they presently have; but this wouldn't explain why Project Concern males had professional aspirations in high school. In addition, male Project Concern participants are employed in public service nearly as much as the control group, but have shown in the past and still show today a disinterest in public service as a career.

Interpretation

There seem to be two reasonable explanations for the pattern we have seen here. The first is that Project Concern participants, because of their experience in integrated schools, are more confident about their ability to work in predominantly white settings. Factories and government employment are traditional havens for blacks--positions where there is less concern about the possibility of being rejected because of color. Desegregated students, being less fearful of discrimination (Crain, Hawes, Miller and Peichert, 1985) are more

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willing to try their hand at jobs which require considerable interaction with whites. Sales and to some degree service positions are good examples of this. Although the sample size is too small to analyze individual occupations, a pattern does appear. Control group participants are overrepresented in health and welfare occupations, and as janitors, and men are particularly likely to be mailmen. Women are overrepresented as data entry clerks but underrepresented in most other office occupations. Project Concern women appear as secretaries, clerks, bank tellers, and in office positions with insurance companies. Both men and women from Project Concern schools are likely to be waiters and waitresses and employed in a variety of sales positions.

The second hypothesis, which cannot be tested with these data, is that black alumni of desegregated schools are more likely to be hired in positions which involve "meeting the public"--meaning in this case the white public. Presumably 12 years in suburban schools should impact on pronunciation and the use of black grammar; and simply having the name of a middle-class suburban school on one's resume should affect at least some personnel officers in white-controlled firms. (Evidence of this appears in Crain, 1984.)

Summary and Conclusions

Black students who attended desegregated schools wind up in different kinds of jobs than those who attended segregated schools. In this case, the segregated and desegregated students entered the same metropolitan labor market after finishing school. But the desegregated students worked in firms which had more white employees and

worked in occupations which nationally are more often held by whites. They are more optimistic about their chance for promotion, and perhaps they should be, since they are more likely to be working in private industry rather than in government, more likely to be in white-collar and professional sales occupations. The results of this study are particularly trustworthy, since they are based on a sixteen-year followup of a randomized experiment.

The mechanisms for male and female students seem slightly different. A separately published analysis of the same experiment indicates that male students from desegregated schools are considerably more likely to attend college and complete more years of college schooling than males who went to segregated schools. Our data here show that male students recall having held higher aspirations for employment when they were in high school, particularly aspiring to professional positions more often. This may explain their desire to go to college, and their college attendance probably explains why those who are now in the labor force are more likely to be in sales, good white-collar positions, and even in some service positions and much less likely to be working as laborers or in semi-skilled factory work.

For females, educational attainment is less important. The analysis of the educational data indicate that females' educational attainment is not greatly effected by desegregation. However, the female graduates of desegregated schools, even though they do not have more education than graduates of segregated schools have considerably better jobs. We suspect that one reason is that they are better trained;

at least they are more likely to report that they have the position they have because they have the training for it. They also report using more white contacts to locate jobs and as references when applying for them. The result is that women from desegregated schools are twice as likely to be in professional sales and higher-status white-collar positions and to be in working in service positions in the private sector. They are only one-third as likely to be working in any government positions and only half as likely to be in blue-collar occupations.

Although the data touched on this point only indirectly, it seems a reasonable interpretation that black graduates of desegregated schools hold better jobs because they are more confident in their relations with whites. Analysis of these data (Crain, Hawes, Miller, and Piechert, 1985) found not only that black male graduates of desegregated schools had more years of schooling as a result, but that both males and females had more contact with whites socially, were more likely to live in integrated neighborhoods, and perceived less discrimination in their dealings with white institutions and employers. All this should make it easier for them to think in terms of obtaining a position in a white work environment, in a occupation normally held by whites. We also think that employers will be more likely to hire black workers who hold their credential of a high school diploma from a suburban school, since this is tangible evidence to the employer that the student has had experience in working with whites.

Other research on desegregation has found positive effects of desegregation in short-term outcomes, such as achievement test scores

or student attitudes. This study concludes that those short-term changes in student attitudes have a long-term effect in adulthood.

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Table 1: Mean percentage black of occupations held by Project Concern Participants and Control Group members

	Males		Females	
	Project Concern Participants	Control Group	Project Concern Participants	Control Group
mean percent black of occupations held[a]	12.9%	14.5%*	10.4%	15.3%**
(effective n)	(49)	(103)	(72)	(70)

[a] percentages are computed for workers of same sex across the U.S.

* $p \leq .05$, one-tailed

** $p \leq .01$, one-tailed

Table 2: Occupations held by Project Concern Participants and Control Group Members

Occupations[a]	Males		Females	
	Project Concern Participants	Control Group	Project Concern Participants	Control Group
Under 10% Black:				
1. Sales	10.5%*	2.3%	4.0%	2.3%
2. Professional/ Managers	1.8%	2.4%	4.0%	0.0%
3. Entertainment	1.8%	1.2%	0.0%	2.3%
4. High White Collar	8.8%*	2.3%	25.8%*	15.2%
	22.9%*	8.2%	33.8%*	19.8%
Over 10% Black:				
5. High Blue Collar	10.5%	12.7%	6.1%	6.3%
6. High Public Service	3.5%	4.8%	5.1%	9.2%
7. Low Service	17.5%	10.9%	18.2%*	8.4%
8. High Service	7.0%	6.5%	7.4%	3.7%
9. Low Blue Collar	7.0%	15.4%*	0.0%	6.1%
10. Low White Collar	15.8%	18.0%	26.3%	31.3%
11. Labor	10.5%	18.7%	1.0%	0.5%
12. Low Public Service	5.3%	4.8%	2.0%	14.8%*
	77.1%	91.8%	66.1%	80.0%
(effective n)	(57)	(121)	(94)	(85)

[a] occupations ranked by national racial composition, sexes combined.

* $p < .05$, one-tailed

Table 3: Holland codes of occupations held by Project Concern Participants and Control Group Members

	Males		Females	
Holland Category:	Project Concern Participants	Control Group	Project Concern Participants	Control Group
Realistic	51.8%	59.5%	12.1%	25.0%*
Investigative	1.8%	2.0%	0.0%	0.0%
Artistic	1.8%	0.7%	0.0%	2.6%
Social	8.9%	15.5%	13.9%	31.4%**
Enterprising	28.6%*	13.0%	14.9%*	6.4%
Conventional	7.1%	9.3%	59.1%**	34.6%
TOTAL	100.0%	100.0%	100.0%	100.0%
(effective n)	(56)	(105)	(85)	(75)

* $p < .05$, one-tailed
** $p < .01$, one-tailed

Table 4: How Project Concern Participants and Control Group Members describe their employment

	Males		Females	
	Project Concern Participants	Control Group	Project Concern Participants	Control Group
Co-workers mostly white	48.9%	45.8%	72.4%*	58.1%
Chances for promotion good	65.1%*	47.8%	48.9%*	39.3%
(effective n)	(46)	(87)	(76)	(71)

* $p < .05$, one-tailed

Table 5: Percentage of students in Private Sector White Collar or Service occupations by Experimental Assignment

(Percent in private white collar or service)

	Experimental Assignment						
	1966 Experiment		1968-69 Random Assignment			Volunteers	
	exper.	control	exper.	refused	control	exper.	control
Males:							
uncontrolled	44.7%	31.9%	44.1%	45.6%	43.4%	66.0%	49.4%
controlled*	45.3%	38.3%	39.4%	39.9%	42.4%	60.1%	51.8%
Females							
uncontrolled	79.6%	49.6%	81.3%	66.0%	66.5%	91.0%	68.3%
controlled*	80.4%	52.7%	80.7%	65.8%	67.4%	86.1%	63.0%

*Regression equations controls were mother's education, presence of encyclopedia, newspaper and typewriter in childhood home, number of siblings, parental homeownership, two parents present at age 14, and age of respondent.

Note: private white-collar or service includes 6 categories from the list shown in table 2: Sales professional, and high and low white-collar and service.

Table 6: Effect of desegregation, age, family background and educational attainment on three measures of occupational outcome

	% black of occupation		% in high white collar, sales, entertainment[a]		% in private, white collar, service	
	r	β	r	β	r	β
Males						
Project Concern Participation	-.094	-.036	.132	.072	.109	.082
Education	-.185	-.162**	.270	.242**	.131	.159**
Family Background	.183	.157**	.175	.119*	.134	.161**
Age	-.007	.005	-.006	-.031	-.175	-.204**
multiple r		.175		.310		.300
Females						
Project Concern Participation	-.263	-.267**	.122	.114*	.254	.288**
Education	-.117	-.090	.166	.146*	-.224	-.216**
Family Background	.154	.185**	.044	.074	.203	.158**
Age	.054	-.018	.058	.059	-.169	-.035
multiple r		.399		.212		.329

[a] these categories of occupations are less than 10% black

[b] see table 5 for category descriptions

*$p < .05$, one-tailed

**$p < .01$, one-tailed

Table 7: How Project Concern Participants and Control Group Members describe obtaining their present or (last) position

	Males		Females	
	Project Concern Participants	Control Group	Project Concern Participants	Control Group
% who left another job to take this one	46.8%*	31.1%*	44.6%	36.9%
% who had training or experience for position	47.8%	45.1%	77.4%*	63.0%
% white of personal contacts used to find position	22.7%	17.7%	31.0%	22.7%
(effective n)	(46)	(87)	(76)	(71)

* $p < .05$, one-tailed

Table 8:
Present and High School Aspirations of Project Concern Participants and Control Group Members, by Sex

	Females				Males			
	Present Aspirations		High School Aspirations		Present Aspirations		High School Aspirations	
	Project Concern Participants	Control Group	Project Concern Participants	Control Group	Project Concern Participants	Control Group	Project Concern Participants	Control Group
Low Percent Black Occupations:								
Sales	4.0	1.5	1.9	0	4.9	1.5	1.8	0
Professional	24.0	21.3	19.9	19.0	41.0*	24.8	31.6*	16.5
Entertainment	10.0	4.3	14.0	6.8	9.8	9.7	12.3	18.7
White Collar	36.5	31.6	26.5	28.8	9.8	15.3	10.5	11.4
TOTAL	74.5	58.7	62.3	54.6	65.5	51.3	56.2	46.6
High Percent Black Occupations:								
Blue Collar	4.0	2.8	3.7	3.8	13.1*	25.1	28.1	33.0
Service	3.5	7.9	10.7	10.0	3.3	4.2	7.1	3.8
Public Service	18.0*	30.5	23.3	31.6	18.1	19.4	8.8	16.5
TOTAL	25.5	41.2	37.7	45.4	34.5	48.7	44.0	53.3
(effective n)	(90)	(85)	(96)	(88)	(61)	(107)	(57)	(91)

* $p < .05$, one-tailed

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